

MULTIPLE INTELLIGENCES: CURRENT TRENDS IN ASSESSMENT

By

MARSHA J. HARMAN*

S. THOMAS KORDINAK**

A. JERRY BRUCE***

* - *** Professor of Psychology, Department of Psychology and Philosophy, Sam Houston State University.

ABSTRACT

With his theory of multiple intelligences, Howard Gardner challenged the presumption that intelligence is a single innate entity. He maintained that multiple intelligences exist and are related to specific brain areas and symbol systems. Each of the intelligences has its merits and limits, but by using a multiple intelligences approach, more children will likely find their place in society. Assessing and identifying multiple intelligences in individuals has been difficult with some efforts psychometrically challenged. The present investigators argue that individual intelligence tests have subtests that could actually assist in identifying at least some of the individual's multiple intelligences.

Keywords: Multiple Intelligences, Intelligence Assessment, Howard Gardner

INTRODUCTION

Howard Gardner's (1983/2003) theory of multiple intelligences challenged the beliefs of previous and current investigators when he proposed that intelligence was not a single inherited entity. Instead, he proposed that multiple intelligences exist and impact an individual's ability to function. Through his work with brain injury, he reasoned that there were distinct areas of intelligence. Each of the intelligences has its virtues and limitations. Gardner's view of intelligence was defined as the ability to solve problems or create solutions valued in a cultural setting. To put it in Gardner's (1985) words, intelligence "... is the capacity to grasp the basic fundamental relations in a situation" (p. 113). Gardner, at one time, thought it possible to create a series of tests for each of the intelligences but also saw it as a gargantuan task which, to this date, has not occurred. This treatise will argue that individual intelligence tests have subtests that could actually assist in identifying at least some of the individual's multiple intelligences. The tests themselves do not argue for a unitary view; their use does.

When reviewing the literature, it is obvious that the research is still sparse regarding multiple intelligences. There are a number of dissertations that have been written recently, and perhaps the researchers will publish their findings. However, it is difficult to find a broad base of research that is rigorous in methodology. Moreover, the

available writings are typically written for classroom teachers and not for the research community.

Gardner's Proclamations

Reacting to what he viewed as a disservice to members of various cultures, Gardner (1989/2003) adamantly challenged the traditional view of intelligence as a unitary construct. Instead, he maintained that intelligence is any knack for problem solving and the generation of items respected by at least one culture. Alternatively, Gardner developed criteria to determine a valid intelligence. Thus, to be identified as one of the intelligences, Gardner used the following criteria:

- Affected and isolated by brain injury
- Extraordinary in exceptional individuals perhaps identified as savants or prodigies
- Identified as a nucleus of processes
- Based on psychological research
- Psychometrically supported
- Idiosyncratically developed and characterized by a set of exceptional ultimate executions
- Credibly evolutionary
- Inclined to encoding in a representational schema

Gardner (2003) commented on the paradigm shifts within the last century in which the idea of intelligence narrowed to focus on information processing. The general idea was

to examine an individual's ability to encode and retrieve information. The narrowed focus, whether intended or not, excluded a number of children. When they failed to meet the threshold of average intelligence, which included a focus on mathematic and semantic skills, children without these specific skills were isolated into special classes that were charged with providing different teaching methods for smaller groups of children. However, these children rarely managed to attain the achievement levels of their peers or be dismissed from special classes (Taylor, 2002).

Inventories Designed Specifically to Identify Multiple Intelligences

The Multiple Intelligences Research and Consulting, Inc. was established by C. Branton Shearer in 1987 and has produced the Multiple Intelligences Developmental Assessment Scales (MIDAS) for purchase. Most of the products are for teachers; however, there is one MIDAS kit advertised for adults. The website provides a description of the MIDAS as well as a sample profile and sample questions. The questions are closed with initial stems of, "Did you ever...", "Do you...", and "Can you..." The responses are in a multiple choice format that corresponds to a continuum with one option being, "I don't know." Additionally, the website provides a draft report on the MIDAS criterion validity under the Research button. The website maintains that the MIDAS is significantly different from purported multiple intelligences tests accessible in books and on the web. Still, it is a self-report test.

Gardner's multiple intelligences are paired with visual, auditory, and kinesthetic learning styles at Business Balls. The website provides tests on which an individual rates agreement on statements for the multiple intelligences and rates the preferred visual, auditory, or kinesthetic responses for given tasks. On the multiple intelligences test, one rates agreement on a continuum and places the answers on an Excel document; then Excel adds up the numbers for each of the intelligences and provides a bar graph, a visual representation of one's stronger intelligences and weaker intelligences. Once again, these are self-report tests with all the validity issues of self-

report measurements.

The website at Birmingham Grid for Learning provides a very brief explanation of multiple intelligences. There is also an opportunity to take a multiple intelligences test that has five sections. The first section requests one's gender, age group, and country. The remaining sections request that one rate each statement on a continuum from *this is not like me at all* to *this is always like me*. Once completed, a very professional circular graph is provided to display the individual's results in a colorful manner. At this website, one may also request results using the variables of gender, age range, and country. Yet, even with the attractive professional-looking display, it is nevertheless a self-report measure. One might also conclude that individuals visiting this site and completing the measure are providing data for a research study even though the site is sponsored by the Birmingham City Council in the United Kingdom.

Walter McKenzie has created a website where he has bookmarked online resources for classroom use. He also generated a paper-and-pencil measure, the Multiple Intelligences Inventory (1999), which is divided into four parts. The first part is a checklist divided into nine sections. Checks are placed by the statements that describe the individual; the checks are then added for each section. On Part II, the individual places the totals on a table and performs some multiplication to derive scores. Part III requires the individual to plot a bar graph using the aforementioned scores. Part IV is the key to what the scores represent. McKenzie has provided a note indicating that the Multiple Intelligences Inventory is not a test but rather a snapshot at one moment in time indicating an individual's perceived MI inclinations. Such a disclaimer may lend more validity to this particular self-report measure.

Multiple Intelligences for Adult Literacy and Education provides yet another rating scale to help individuals to determine which intelligences are strongest for them. Once an individual completes the 56 items on a continuum from *statement does not describe you at all* to *statement describes you exactly*, the individual clicks the button, Find my Strengths! The intelligences are ranked from strongest to less strong, and the top three have

suggestions for adult individuals to learn most effectively using their strengths. Resources are also provided if an individual wishes to gain strength in other intelligences. Once again, this scale is a self-reported measure.

The IQ Test Dilemma

Alfred Binet, Victor Henri, and Theodore Simon (Binet, A., & Simon, T. (1916) developed methods in the 19th century for the study of mental functions, especially focusing on higher mental processes. In 1912, William Stern (1914) introduced the concept of the mental quotient, dividing mental age by chronological age. Many theories of intelligence have been developed including Spearman's (1927) two-factor theory, Thorndike's (1927) multifactor theory, Thurstone's (1938) multidimensional theory, Guilford's (1967) structure of intellect theory, Vernon's (1965) hierarchical theory, Cattell and Horn's (Cattell, 1963) fluid and crystallized theory, Carroll's (1997) three-stratum factor analytic theory of cognitive abilities, Campione, Brown, and Borkowskis (Borkowski, 1985; Campione & Brown, 1978) information processing theory, Sternberg's (1986) triarchic theory, and Gardner's (1983/2003) multiple intelligence theory.

Gardner (1983/2003) and his devotees of multiple intelligences theory denigrate comprehensive intelligence tests, dismissing them because of the short-answer format. They maintain that educators who subscribe to the general intelligence paradigm teach subject areas to students and teach the same material to everyone. Such critics maintain that the paradigm advocates for individuals being born with a fixed amount of intelligence that changes very little over a lifetime (Hernstein & Murray, 1994; Jensen, 1969), issues that have been disregarded by many through research and philosophical positions (Cooper, 1999; Gould, 1981). Those who wish to ban IQ tests and those who maintain that short answer tests are not useful because they do not measure mastery of a particular field or discipline perhaps might wish to examine the research literature more carefully. Individual tests of intelligence measure more than rote memorization skills and one's ability to do well on short answer tests.

Sattler (2001) related the Court's decision in *Larry P. v. Wilson Riles* in which psychologists were limited in selection of tests for evaluation and placement. Others have criticized standardized tests with the notion that they are imperfect and limited in conceptualizations of individual ability and of no utility in the classroom. One might ask how often such critics have been in the classroom.

More recent editions of individual comprehensive intelligence tests have a variety of subtests that might measure acquired visual spatial logic, kinesthetic eye-hand coordination, abstract verbal logic, linguistic word meaning, and logical-mathematical areas. For instance, the WAIS-III and WISC-IV have a Matrix Reasoning subtest in which 26 nonverbal reasoning tasks are present for the examinee to choose one of five illustrations to complete the matrix. The subtest measures perceptual reasoning ability and analytical logic. Standing alone, it has a reliability coefficient of .90 with age groups ranging from .84 to .94 for the WAIS III. It would seem that Matrix Reasoning, based on research and with appropriate psychometric properties would be an appropriate tool to measure analytical and logical skills. Perhaps children or adolescents doing well on Matrix Reasoning would view their Logical Mathematical Intelligence as authenticated because the subtest demonstrates skill rather than just reporting it?

Similarly, the Block Design subtest measures analysis and synthesis of visual information, visual organization, and visual-motor coordination. The examinee is requested to create a two-dimensional design using three-dimensional red and white blocks. The reliability coefficients for the Block Design subtest at the various ages range from .76 to .90 with the overall reliability coefficient reported as .86 for the WISC - IV. It would appear that the Block Design subtest would contribute, at least in part, to an authentic assessment of Spatial Intelligence. Additionally, because of the dexterity required and the need to manipulate objects in the assembly, the Block Design subtest might also contribute to assessing Kinesthetic Intelligence. Finally, the Vocabulary subtest could possibly provide some assessment of the Linguistic Intelligence since it requires individuals to explain the meaning of 33 words

presented orally and in print. The overall reliability coefficient is .93 with age groups ranging from .90 to .95. Moreover, these subtests would meet the criteria of being based on psychological research and psychometric principles. Surely, having demonstrated the skills would be more valid than a simple self-report.

Conclusion

In this brief presentation, three or four of the multiple intelligences have been noted. Are comprehensive IQ tests worthless? No! They are required by rehabilitative services and the Social Security Administration which must determine eligibility for services. Even professionals who work with comprehensive IQ tests generally do not disagree with Gardner's multiple intelligences concept. Although both types of intelligence are used in school, their utility may vary. The comprehensive intelligence tests measure development compared to peers, and the multiple intelligences assist educators in determining the most effective ways to teach particular students. However, identifying the specific intelligences or even ranking the intelligences for an individual continues to be difficult. The self-report checklist is better than no assessment; however, at best, it is a crude measure with only face validity.

The suggestion presented here is that assessments, other than self-reports, need to be developed to measure each of the intelligences. Moreover, it seems likely that the most qualified psychometricians required for the task would be professionals skilled in particular intelligences. Having one test that measures all of the intelligences is likely decades of work for one team. However, it would be more manageable if different teams skilled in particular intelligences worked to develop a comprehensive means of assessment for each of the intelligences. For some of the intelligences, the teams might follow in Wechsler's steps and investigate subtests in various published tests to determine their appropriateness to measure the desired concepts. Such investigation and research would lend validity to each of the intelligences since Gardner's criteria for intelligence should be included psychological research based on strong psychometric foundations. It is obvious that there is much

work to be done.

Until the tests for MI are developed, perhaps the use of self-reports along with tests such as the WISC-IV could be used. The self-report points the way and the subscales of the WISC-IV could be used to verify the skills.

References

- [1]. Binet, A., & Simon, T. (1916). *The development of intelligence in children* (E. S. Kit, Trans.) Baltimore: Williams & Wilkins.
- [2]. Birmingham City Council. *Multiple Intelligences*. Retrieved February 2, 2009, from Birmingham Learning Grid Web Site: http://bgfl.org/bgfl/custom/resourcesftp/clientftp/ks3/ict/multiple_int/
- [3]. Borkowski, J. G. (1985). Signs of intelligence: Strategy generalization and metacognition. In S. R. Yussen (Ed.), *The growth of reflection in children* (pp. 105-144). Orlando: Academic Press. Business Balls. Free Multiple Intelligences Tests. Retrieved February 2, 2009, from Business Balls Web site: <http://www.businessballs.com/howardgardnermultipleintelligences.htm>
- [4]. Campione, J. C., & Brown, A. L. (1978). Toward a theory of intelligence: Contributions from research with retarded children. *Intelligence*, 2, 279-304.
- [5]. Carroll, J. B. (1997). The three-strum theory of cognitive abilities. In D. P. Flanagan, J. L. Genshoft, & P. L. Harrison (Eds.), *Contemporary intellectual assessment: Theories, tests, and issues* (pp. 122-130). New York: Guilford.
- [6]. Cattell, R. B. (1963). Theory of fluid and crystallized intelligence: A critical experience. *Journal of Educational Psychology*, 54, 1-22.
- [7]. Cooper, C., (1999). *Intelligence and abilities*. Florence, K: Taylor & Frances/Routledge.
- [8]. Gardner, H. (1983/2003). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.
- [9]. Gardner, H. (1985). *The mind's new science*. New York: Basic Books.
- [10]. Gould, Stephen Jay (1981/1996). *Mismeasure of man*. New York: W. W. Norton.
- [11]. Guilford, J. P. (1967). *The nature of human*

intelligence. New York: McGraw-Hill.

[12]. Herrnstein, R., & Murray, C. (1994). *The bell curve: intelligence and class structure in American life*. New York: The Free Press.

[13]. Jensen, A. R. (1969). How much can we boost I.Q. and scholastic achievement? *Harvard Educational Review*, 33, 1-123.

[14]. McKenzie, W. (1999). *Multiple Intelligences Inventory*. Retrieved February 2, 2009, from Surf Aquarium Web site: <http://surfaquarium.com/MI/inventory.htm>

[15]. Multiple Intelligences for Adult Literacy and Education. *Assessment: How are you smart?* Retrieved February 2, 2009, from Literacy Works Web site: <http://literacyworks.org/mi/intro/index.html>,

[16]. Sattler, J. M. (2001). *Assessment of children: Cognitive applications* (4th edition). Edition. San Diego: Sattler.

[17]. Shearer, C. B. (1987). *Multiple Intelligences Developmental Assessment Scales (MIDAS)*. Retrieved

February 2, 2009, from Multiple Intelligences Research and Consulting, Inc. Web site: <http://miresearch.org/>

[18]. Stern, W. (1914). *The psychological methods of testing intelligence*. Baltimore: Warwick & York.

[19]. Sternberg, R. J. (1986). *Intelligence applied: Understanding and increasing your Intellectual skills*. New York: Harcourt Brace Jovanovich.

[20]. Taylor, L. S. (2002). *No Exit: The 'Black Hole' of Special Education*. Retrieved February 2, 2009, from LewRockwell.com. Web site: <http://www.lewrockwell.com/orig3/taylor2.html>

[21]. Thorndike, E. L. (1927). *The measurement of intelligence*. New York: Bureau of Publications, Teachers College, Columbia University.

[22]. Thurstone, L. L. (1938). Primary mental abilities. *Psychometric Monographs*, No. 1.

[23]. Vernon, P. E. (1965). Ability factors and environmental influences. *American Psychologist*, 20, 723-733.

ABOUT THE AUTHORS

Dr. Marsha J. Harman has degrees in elementary education, counseling education, and counseling psychology. Her primary responsibility at SHSU is training school and clinical psychology graduate students. Additionally, she does private practices, with her specialisation in assessment and psychotherapy with children and families. Consultation in public schools is achieved through her private practice.

Dr. S. T. Kordlnak holds a B.A. & M.A. in Psychology and Ph.D. in Counseling Psychology. His primary responsibility at SHSU is teaching learning to both undergraduate and graduate students and psychometrics to graduate students. His research interest include the MMPI-2, the Rorschach, and personality and academic achievement. He does consultations with public schools and private organizations.

Dr. A. Jerry Bruce's, undergraduate work was in religion and his graduate work in developmental psychology. He has served in many capacities at SHSU including 25 years as chair of Psychology. At present he serves as coordinator of the masters programs within the Department.

